

**Listing of the Claims:**

1-28. (Cancelled)

29. (Currently amended) A U.S. currency evaluation device for receiving a stack of currency bills and rapidly ~~evaluating~~ processing all the bills in the stack, said device comprising:

an input receptacle ~~for receiving~~ adapted to receive a stack of U.S. currency bills to be ~~evaluated~~ processed;

a single output receptacle ~~for receiving~~ adapted to receive said bills after said bills have been ~~evaluated~~ processed;

a transport mechanism ~~for transporting~~ adapted to transport said bills, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit ~~for evaluating said bills, said discriminating unit~~ comprising two detectors positioned along said transport path between said input receptacle and said output receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills, wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit.

30. (Currently amended) A currency evaluation device for receiving a stack of currency bills and rapidly ~~evaluating~~ processing all the bills in the stack, said device comprising:

an input receptacle ~~for receiving~~ adapted to receive a stack of bills to be ~~evaluated~~ processed;

a single output receptacle ~~for receiving~~ adapted to receive said bills after said bills have been ~~evaluated~~ processed;

a transport mechanism ~~for transporting~~ adapted to transport said bills, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit ~~for evaluating said bills, said discriminating unit~~ comprising two detectors positioned along said transport path between said input receptacle and said output receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit;

wherein the input receptacle is adapted to receive a stack of bills having a plurality of denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of denominations.

31. (Previously Presented) The currency evaluation device of claim 30 wherein the discriminating unit is adapted to determine the denomination of currency bills having the same dimensions.

32. (Previously Presented) The currency evaluation device of claim 30 wherein the input receptacle is adapted to receive a stack of bills having a plurality of U.S. currency denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of U.S. currency denominations.

33. (Previously Presented) The currency evaluation device of claim 32 wherein said transport mechanism transports bills at a rate of at least about 800 bills per minute.

34. (Previously Presented) The currency evaluation device of claim 32 wherein said transport mechanism transports bills at a rate of at least about 1000 bills per minute.

35. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, said device comprising:

an input receptacle for receiving a stack of bills to be evaluated;

a single output receptacle for receiving said bills after said bills have been evaluated;

a transport mechanism for transporting said bills, one at a time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit for evaluating said bills, said discriminating unit comprising two detectors positioned along said transport path between said input receptacle and said output receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit;

wherein said means for flagging causes said transport mechanism to halt with said bill whose denomination has not been determined being the last bill transported to said output receptacle;

wherein said transport mechanism transports bills at a rate of at least about 800 bills per minute; and

wherein the input receptacle is adapted to receive a stack of bills having a plurality of denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of denominations.

36. (Previously Presented) The currency evaluation device of claim 35 wherein the optical scanning head scans each bill using reflected light.

37. (Previously Presented) The currency evaluation device of claim 35 wherein the discriminating unit is adapted to determine the denomination of currency bills having the same dimensions.

38. (Previously Presented) The currency evaluation device of claim 35 wherein the input receptacle is adapted to receive a stack of bills having a plurality of U.S. currency denominations and the discriminating unit is adapted to determine the denomination of bills having a plurality of U.S. currency denominations.

39. (Currently amended) A currency evaluation device for receiving a stack of currency bills and rapidly ~~evaluating~~ processing all the bills in the stack, said device comprising:

an input receptacle ~~for receiving~~ positioned to receive a stack of bills to be ~~evaluated~~ processed;

a single output receptacle ~~for receiving~~ positioned to receive said bills after said bills have been ~~evaluated~~ processed;

a transport mechanism ~~for transporting~~ adapted to transport said bills, one at a time, from said input receptacle to said output receptacle along a transport path at a rate of least about 800 bills per minute;

a discriminating unit ~~for evaluating said bills, said discriminating unit~~ adapted to determine the denomination of U.S. currency bills comprising two detectors positioned along said transport path between said input receptacle and said output receptacle, said detectors being disposed on opposite sides of said transport path so as to be disposed adjacent to first and second opposing surfaces of said bills, said discriminating unit counting and determining the denomination of said bills; and

means for flagging a bill when the denomination of said bill is not determined by said discriminating unit;

wherein said means for flagging causes said transport mechanism to halt with said bill whose denomination has not been determined being the last bill transported to said output receptacle[[:]]

~~wherein said transport mechanism transports bills at a rate of at least about 800 bills per minute; and~~

~~wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills.~~

40. (Currently amended) A ~~document~~ U.S. currency evaluation device for receiving a stack of ~~documents~~ U.S. currency bills and rapidly ~~evaluating~~ processing all the ~~documents~~ bills in the stack, said device comprising:

an input receptacle ~~for receiving~~ positioned to receive a stack of ~~documents~~ U.S. currency bills to be ~~evaluated~~ processed, genuine ones of said ~~documents~~ bills each having one

of a plurality of images thereon, said plurality of images defining a plurality of ~~document types~~  
denominations;

a single output receptacle ~~for receiving~~ positioned to receive said ~~documents~~ bills after  
said ~~documents~~ bills have been ~~evaluated~~ processed;

a transport mechanism ~~for transporting~~ adapted to transport said ~~documents~~ bills, one at a  
time, from said input receptacle to said output receptacle along a transport path;

a discriminating unit ~~for evaluating said documents, said discriminating unit~~ comprising  
two detectors positioned along said transport path between said input receptacle and said output  
receptacle, said detectors being disposed on opposite sides of said transport path so as to be  
disposed adjacent to first and second opposing surfaces of said ~~documents~~ bills, said  
discriminating unit being capable of distinguishing among said plurality of ~~document types~~  
denominations by scanning the image on each of said ~~documents~~ bills, said discriminating unit  
counting and determining the ~~document type~~ denomination of said ~~documents~~ bills; and

means for flagging a ~~document~~ bill when the ~~type~~ denomination of said ~~document~~ bill is  
not determined by said discriminating unit;

~~wherein the discriminating unit is adapted to determine the denomination of U.S.~~  
~~currency bills.~~

41-46. (Cancelled)

47. (Currently amended) A method of counting and discriminating currency bills of  
different denominations using a currency evaluation device comprising the acts of:

receiving a stack of bills to be ~~evaluated~~ processed in an input receptacle of the evaluation  
device;

transporting, under control of the evaluation device, the bills, one at a time, from the input  
receptacle to a single output receptacle of the evaluation device along a transport path;

counting and determining the denomination of the bills under control of the evaluation  
device using a denomination discriminating unit comprising two detectors positioned along the  
transport path and disposed on opposite sides of the transport path so as to be disposed adjacent to  
first and second opposing surfaces of the bills; and

flagging a bill when the denomination of the bill can not be determined under control of the evaluation device.

48. (Previously Presented) The method of claim 47 wherein the act of flagging a bill comprises the act of halting the transporting of the bills in the stack with the bill whose denomination has not been determined being the last bill transported to the output receptacle.

49. (Previously Presented) The method of claim 48 wherein the acts of transporting and determining the denomination of bills are performed at a rate of at least about 1000 bills per minute.

50. (Previously Presented) The method of claim 48 wherein the act of determining the denomination of the bills comprises the acts of scanning by the detectors at least a preselected segment of each side of each bill transported between the input and output receptacles, and producing output signals representing the scanned images.

51. (Previously Presented) The method of claim 50 the acts of scanning comprises the act of detecting reflected light.

52. (Previously Presented) The method of claim 51 wherein the acts of transporting and determining the denomination of bills are performed at a rate of at least about 800 bills per minute.

53. (Previously Presented) The method of claim 52 further comprising the act of removing, under the control of an operator of the evaluation device, the bill whose denomination has not been determined from the evaluation device after the act of transporting has been halted.

54. (Previously Presented) The method of claim 52 wherein the stack of bills received in the input receptacle have a plurality of U.S. currency denominations and the discriminating unit determines the denomination of bills having a plurality of U.S. currency denominations.

55. (Previously Presented) The method of claim 47 wherein the act of determining the denomination of the bills comprises the acts of scanning by the detectors at least a preselected segment of each side of each bill transported between the input and output receptacles, and producing an output signal representing the scanned images.

56. (Previously Presented) The method of claim 47 wherein the acts of transporting and determining the denomination of bills are performed at a rate of at least about 800 bills per minute.

57. (Previously Presented) The method of claim 47 wherein the acts of transporting and determining the denomination of bills are performed at a rate of at least about 1000 bills per minute.

58. (Previously Presented) The method of claim 57 wherein the stack of bills received in the input receptacle have a plurality of U.S. currency denominations and the discriminating unit determines the denomination of bills having a plurality of U.S. currency denominations.

59. (Previously Presented) The method of claim 47 wherein the act of flagging comprises the act of halting the transporting of bills.

60. (Previously Presented) The method of claim 59 further comprising the act of removing, under the control of an operator of the evaluation device, the bill whose denomination has not been determined from the evaluation device after the act of transporting has been halted.

61. (Previously Presented) The method of claim 60 further comprising the act of resuming transporting bills after the bill whose denomination has not been determined has been removed from the evaluation device.

62.-67. (Cancelled)

68. (Currently amended) A currency evaluation device adapted to receive a stack of currency bills and rapidly ~~evaluate~~ process all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be ~~evaluated~~ processed;

a single output receptacle positioned to receive bills after the bills have been ~~evaluated~~ processed;

a transport mechanism comprising a drive motor and rollers and being adapted to transport bills, one at a time, from the input receptacle to the output receptacle along a transport path at a rate of at least about 800 bills per minute;

a discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle and further comprising a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit being adapted to determine the denomination of U.S. currency bills; and

means for flagging a bill when the denomination of the bill is not determined by the discriminating unit.

69. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

a single output receptacle positioned to receive bills after the bills have been evaluated;

a transport mechanism comprising a drive motor and rollers for transporting the bills, one at a time, from the input receptacle to the output receptacle along a transport path at a rate of at least about 800 bills per minute; and

a discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle and further comprising a processor, the



detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit counting and determining the denomination of the bills, wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills by comparing the information derived from at least one of the characteristic information output signals with stored master information corresponding to a plurality of U.S. currency denominations; and

a flagging device comprising the processor and an encoder linked to the transport mechanism, the encoder producing tracking signals in response to the physical movement of the bills, the processor generating a no call signal when the denomination of a bill is not determined by the processor, wherein the processor is coupled to the transport mechanism and is programmed to cause the transport mechanism to halt when the denomination of a bill is not determined by the processor.

70. (Previously Presented) The currency evaluation device of claim 69 wherein the processor is programmed to cause the transport mechanism to halt with the bill whose denomination has not been determined being located at a predetermined position.

71. (Previously Presented) The currency evaluation device of claim 69 wherein the processor is programmed to cause the transport mechanism to halt with the bill whose denomination has not been determined being the last bill transported to the single output receptacle.

72. (Previously Presented) The currency evaluation device of claim 69 wherein bills of at least two of the plurality of denominations have the same size and the discriminating device is adapted to denominate bills of the plurality of denominations including bills of different denominations having the same size.

73. (Previously Presented) The currency evaluation device of claim 69 wherein the discriminating unit is adapted to denominate bills independently of the size of the bills.

74. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, the device comprising:

- an input receptacle positioned to receive a stack of bills to be evaluated;

- a single output receptacle positioned to receive the bills after the bills have been evaluated;

- a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism located between the input receptacle and the output receptacle to transport the bills, one at a time, from the input receptacle to the output receptacle along a transport path;

- a discriminating unit comprising two image detectors positioned along the transport path between the input receptacle and the output receptacle, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, and comprising a processor, the detectors generating image characteristic information output signals in response to detected characteristic information, the image characteristic information output signals being electrically coupled to the processor, the processor receiving the image characteristic information output signals and generating a denomination signal in response thereto; and

- a flagging device comprising the processor and an encoder linked to the transport mechanism, the encoder producing tracking signals in response to the physical movement of the bills, the processor generating a no call signal when the denomination of a bill is not determined by the processor.

75. (Previously Presented) A high-speed U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

- an input receptacle positioned to receive a stack of bills to be evaluated;

- at least one output receptacle positioned to receive bills after evaluation;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being located between the input receptacle and the output receptacle and being adapted to transport the bills, one at a time, from the input receptacle to the output receptacle along a transport path, the transport mechanism being adapted to transport bills at a rate in excess of about 800 bills per minute; and

a denomination discriminating unit comprising two detectors, positioned along the transport path between the input receptacle and the output receptacle, and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit being adapted to denominate and total bills of a plurality of U.S. denominations at a rate in excess of about 800 bills per minute;

wherein the device is adapted to deliver any bill that has been successfully evaluated and totaled to one and only one of the at least one output receptacle.

76. (Previously Presented) A method of processing currency using a U.S. currency denominating device comprising the acts of:

receiving a stack of bills having a plurality of U.S. denominations to be denominated in an input receptacle of the device;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate of at least about 800 bills per minute using a transport mechanism comprising a transport drive motor and transport rollers;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate of at least about 800 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; wherein the act of determining the denomination comprises the acts of:

the detectors detecting characteristic image information from the bills;

the detectors generating characteristic image information output signals in response to detected characteristic information, the characteristic image information output signals being electrically coupled to the processor;

the processor receiving the characteristic image information output signals; and

the processor generating a denomination signal in response thereto; and

delivering bills that have been denominated to a single denominated bill output receptacle of the device.

77. (Previously Presented) The method of claim 76 further comprising the act of flagging a bill when the denomination of the bill can not be determined under the control of the device.

78. (Previously Presented) The method of claim 77 wherein the act of flagging comprises the act of diverting a bill whose denomination is not determined to a stacker bin separate from the denominated bill output receptacle.

79. (Previously Presented) The method of claim 77 wherein the act of flagging comprises the act of halting the act of transporting of the bills when the denomination of a bill is not determined by the discriminating unit.

80. (Previously Presented) The method of claim 79 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position.

81. (Previously Presented) The method of claim 80 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position in an output receptacle.

82. (Previously Presented) The method of claim 79 wherein the act of flagging comprises the act of halting the act of transporting of the bills in the stack with the bill whose denomination has not been determined being the last bill transported to an output receptacle.

83. (Previously Presented) The method of claim 82 further comprising the act of removing the bill whose denomination has not been determined from the output receptacle before said transport mechanism is restarted.

84. (Previously Presented) A U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle adapted to receive a stack of U.S. bills of a plurality of denominations, the bills having a narrow dimension;

a transport mechanism positioned to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being positioned to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a denomination discriminating unit adapted to determine the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the discriminating unit comprising two detectors positioned along the transport path, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, wherein the detectors are positioned to receive light reflected off passing bills and the detectors are adapted to generate reflected light characteristic information output signals in response to detected characteristic information, the reflected light characteristic information output signals being electrically coupled to a processor, the processor receiving the reflected light characteristic information output signals and generating a denomination signal in response thereto;

a single denominated bill output receptacle positioned to receive bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills that the device is not capable of denominating, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills which are denominated by the denomination discriminating unit to the denominated bill output receptacle and bills whose denomination are not determined by the denomination discriminating unit to the separate stacker bin.

85. (Previously Presented) A U.S. currency denominating device for receiving a stack of U.S. currency bills and rapidly evaluating the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of U.S. currency bills of a plurality of denominations to be evaluated, the bills having a narrow dimension;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being adapted to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being adapted to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a denomination discriminating unit adapted to determine the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the bills the discriminating unit is adapted to denominate having images associated therewith corresponding to the plurality of denominations that the discriminating unit is adapted to denominate, the discriminating unit comprising two detectors positioned along the transport path, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors being adapted to scan opposing surfaces of passing bills and generate image signals, the discriminating unit determining the denomination of bills based on the image signals;

a single denominated bill output receptacle for receiving bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills whose denomination have not been determined by the discriminating unit, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills which are denominated by the denomination discriminating unit to the denominated bill output receptacle and bills whose denomination have not been determined by the discriminating unit to the separate stacker bin.

86. (Previously Presented) A currency evaluation device for receiving a stack of currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

a single output receptacle positioned to receive the bills after the bills have been evaluated;

a transport mechanism comprising a drive motor and rollers for transporting the bills, one at a time, from the input receptacle to the output receptacle along a transport path at a rate of at least about 800 bills per minute;

a discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the at least one output receptacle and comprising a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit counting and determining the denomination of the bills, wherein the discriminating unit is adapted to determine the denomination of U.S. currency bills by comparing the denomination signal with stored master information corresponding to a plurality of U.S. currency denominations; and

a flagging device comprising a processor and an encoder linked to the transport mechanism, the encoder producing tracking signals in response to the physical movement of the bills, the processor generating a no call signal when the denomination of a bill is not determined by the currency evaluation device.

87. (Previously Presented) A U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

a single output receptacle positioned to receive the bills after the bills have been evaluated;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism located between the input receptacle and the output receptacle to transport the bills, one at a time, from the input receptacle to the output receptacle along a transport path; and

a denomination discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle and comprising a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit being adapted to denominate bills of a plurality of U.S. denominations.

88. (Previously Presented) The currency evaluation device of claim 87 wherein the detectors are adapted to detect reflected and generate reflected light characteristic output signals.

89. (Previously Presented) The currency evaluation device of claim 88 wherein the discriminating unit is adapted to denominate bills based solely on the detection of reflected light.

90. (Previously Presented) The currency evaluation device of claim 87 wherein the detectors are optical detectors adapted to generate optical characteristic output signals.

91. (Previously Presented) The currency evaluation device of claim 90 wherein the transport mechanism is adapted to transport and the discriminating unit is adapted to denominate bills at a rate of at least about 800 bills per minute.



92. (Previously Presented) The currency evaluation device of claim 90 wherein the discriminating unit is adapted to denominate bills based solely on the detection of optical characteristic information.

93. (Previously Presented) The currency evaluation device of claim 92 wherein the transport mechanism is adapted to transport and the discriminating unit is adapted to denominate bills at a rate of at least about 1000 bills per minute.

94. (Previously Presented) The currency evaluation device of claim 87 wherein the processor is adapted to generate a scanned pattern from each of the bills based on the characteristic information output signals and determine the denomination of a bill by comparing the scanned pattern generated from the bill with master patterns associated with different denominations of bills, the master patterns being stored in a memory.

95. (Previously Presented) A high-speed compact, single input receptacle, single output receptacle currency denominating device for receiving a stack of currency bills having a plurality of denominations and rapidly denominating the bills in the stack, the device comprising:

- a single input receptacle adapted to receive a stack of bills having a plurality of denominations to be evaluated;

- a single output receptacle adapted to receive the bills after the bills have been evaluated;

- a transport mechanism adapted to transport the bills in the direction of the narrow dimension of the bills, one at a time, from the input receptacle to the output receptacle along a transport path at a rate in excess of about 800 bills per minute;

- a denomination discriminating unit adapted to determine the denomination of each of the bills including bills of a plurality of denominations at a rate in excess of about 800 bills per minute, the bills the discriminating unit is adapted to denominate having images associated therewith corresponding to the plurality of denominations that the discriminating unit is adapted to denominate, the discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle, the detectors being disposed on

opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors being adapted to scan passing bills and generate image signals, the discriminating unit determining the denomination of the bills based on the image signals.

96. (Previously Presented) A method of processing currency using a currency evaluation device comprising the acts of:

receiving a stack of bills having a plurality of denominations to be evaluated in a single input receptacle of the evaluation device, bills of at least two of the plurality of denominations having the same dimensions;

receiving the bills after the bills have been evaluated in a single output receptacle of the evaluation device;

transporting the bills, one at a time, from the input receptacle to the output receptacle along a transport path using a transport mechanism comprising a transport drive motor and transport rollers;

determining, independently of the size of the bills, the denomination of each of the bills including bills of a plurality of denominations using a discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; wherein the act of determining the denomination comprises the acts of:

the detectors detecting characteristic information from the bills;

the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor;

the processor receiving the characteristic information output signals; and

the processor generating a denomination signal in response thereto.

97. (Previously Presented) A high-speed U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of bills to be evaluated;

at least one output receptacle positioned to receive bills after evaluation;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being located between the input receptacle and the output receptacle and being adapted to transport the bills, one at a time, from the input receptacle to the output receptacle along a transport path, the transport mechanism being adapted to transport bills at a rate in excess of about 800 bills per minute; and

a denomination discriminating unit comprising two detectors positioned along the transport path between the input receptacle and the output receptacle and comprising a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to detected characteristic information, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit being adapted to denominate and total bills of a plurality of U.S. denominations at a rate in excess of about 800 bills per minute, the discriminating unit is adapted to denominate bills of the plurality of denominations including bills of different denominations having the same size;

wherein the device is adapted to deliver any bill that has been successfully denominated and totaled to one and only one of the at least one output receptacle.

98. (Previously Presented) The currency evaluation device of claim 97 wherein the discriminating units is adapted to denominate bills independently of the size of the bills.

99. (Previously Presented) The currency evaluation device of claim 97 wherein each bill is rectangular and has a wide dimension and a narrow dimension and wherein the transport mechanism is adapted to transport bills in a transport direction with their narrow dimension parallel to the transport direction.

100. (Previously Presented) The device of claim 97 wherein the detectors are adapted to scan passing bills and generate image signals and each of the U.S. bills the discriminating unit is adapted to denominate have a black side and a green side associated therewith and wherein the discriminating unit is adapted to determine the denomination of the U.S. bills based on the image signals associated with only the green side of bills.

101. (Previously Presented) The device of claim 97 wherein the detectors are adapted to scan passing bills and generate image signals and each of the U.S. bills the discriminating unit is adapted to denominate have a black side and a green side associated therewith and wherein the discriminating unit is adapted to determine the denomination of the U.S. bills based at least on the image signals associated with the green side of bills.

102. (Previously Presented) The device of claim 97 wherein the detectors being adapted to scan passing bills and generate image signals and each of the U.S. bills the discriminating unit is adapted to denominate have a portrait-side and a reverse-side opposite the portrait-side associated therewith and wherein the discriminating unit is adapted to determine the denomination of the U.S. bills based on the image signals associated with only the reverse-side of bills.

103. (Previously Presented) A system comprising the device of claim 97 and a printer coupled thereto.

104. (Previously Presented) The device of claim 97 wherein the device is adapted to receive and denominate bills of a plurality of denominations and further comprising a display adapted to communicate the total value of bills contained in the output receptacle and the number of bills of each of the plurality of denominations contained in the output receptacle.

105. (Previously Presented) The currency evaluation device of claim 97 wherein the device is adapted to receive bills of a plurality of denominations in the input receptacle and transport bills of a plurality of denominations to the output receptacle.

106. (Previously Presented) The currency evaluation device of claim 105 wherein the detectors are positioned to receive light reflected off passing bills and the detectors are adapted to generate reflected light characteristic information output signals in response to detected characteristic information, the reflected light characteristic information output signals being electrically coupled to the processor, the processor receiving the reflected light characteristic information output signals and generating the denomination signal in response thereto.

107. (Previously Presented) A method of processing currency using a U.S. currency evaluation device comprising the acts of:

receiving a stack of bills having a plurality of U.S. denominations to be denominated in an input receptacle of the device;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate of at least about 800 bills per minute using a transport mechanism comprising a transport drive motor and transport rollers;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate of at least about 800 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; wherein the act of determining the denomination comprises the acts of:

the detectors detecting reflected light from the bills;

the detectors generating reflected light characteristic information output signals in response to detected characteristic information, the reflected light characteristic information output signals being electrically coupled to the processor;

the processor receiving the reflected light characteristic image information output signals; and

the processor generating a denomination signal in response thereto; and

delivering bills that have been denominated to a single denominated bill output receptacle of the device.

108. (Previously Presented) The method of claim 107 further comprising the act of flagging a bill when the denomination of the bill can not be determined under control of the device.

109. (Previously Presented) The method of claim 108 wherein the act of determining the denomination is based solely on the detection of reflected light.

110. (Previously Presented) The method of claim 107 wherein the act of determining the denomination comprises the act of the processor receiving the output signal, the act of generating a scanned pattern therefrom, and the act of comparing the scanned pattern to at least one master pattern stored in a memory of the device, the memory having stored therein at least one master pattern associated with each genuine bill which the system is capable of identifying.

111. (Previously Presented) A method of processing currency using a U.S. currency evaluating device comprising the acts of:

- receiving a stack of bills having a plurality of U.S. denominations to be denominated in an input receptacle of the device;

- transporting the bills, one at a time, from the input receptacle along a transport path at a rate of at least about 1000 bills per minute using a transport mechanism comprising a transport drive motor and transport rollers;

- determining the denomination of each of the bills including bills of a plurality of U.S. denominations at a rate of at least about 1000 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; wherein the act of determining the denomination comprises the acts of:

  - the detectors detecting characteristic image information from the bills;

  - the detectors generating characteristic image information output signals in response to detected characteristic information, the characteristic image information output signals being electrically coupled to the processor;

the processor receiving the characteristic image information output signals; and  
the processor generating a denomination signal in response thereto; and  
delivering bills that have been denominated to a single denominated bill output receptacle of the device.

112. (Previously Presented) The method of claim 111 further comprising the act of flagging a bill when the denomination of the bill can not be determined under control of the device.

113. (Previously Presented) The method of claim 112 wherein the act of flagging comprising the act of diverting a bill whose denomination is not determined to a stacker bin separate from the denominated bill output receptacle.

114. (Previously Presented) The method of claim 111 wherein the act of flagging comprising the act of halting the act of transporting of the bills when the denomination of a bill is not determined by the discriminating unit.

115. (Previously Presented) The method of claim 114 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position in an output receptacle.

116. (Previously Presented) A U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of U.S. bills of a plurality of denominations to be evaluated, the bills having a narrow dimension;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being positioned to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being adapted to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a denomination discriminating unit comprising two detectors positioned along the transport path and comprising a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, the detectors generating characteristic information output signals in response to characteristic information detected from passing bills, the characteristic information output signals being electrically coupled to the processor, the processor receiving the characteristic information output signals and generating a denomination signal in response thereto, the discriminating unit being adapted to denominate bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute;

a single denominated bill output receptacle adapted to receive bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills that the device is not capable of denominating, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills which are denominated by the denomination discriminating unit to the denominated bill output receptacle and bills which are not denominated by the denomination discriminating unit to the separate stacker bin.

117. (Previously Presented) A U.S. currency evaluation device for receiving a stack of U.S. currency bills and rapidly evaluating all the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of U.S. bills of a plurality of denominations to be evaluated, the bills having a narrow dimension;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being adapted to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being adapted to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a denomination discriminating unit adapted to determine the denomination of bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the discriminating unit comprising two detectors positioned along the transport path, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing



surfaces of the bills, wherein the detectors are positioned to receive light from passing bills and the detectors are adapted to generate received light characteristic information output signals in response to detected characteristic information, the received light characteristic information output signals being electrically coupled to a processor, the processor receiving the received light characteristic information output signals and generating a denomination signal in response thereto;

a single denominated bill output receptacle positioned to receive bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills that the device is not capable of denominating, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills which are denominated by the denomination discriminating unit to the denominated bill output receptacle and bills whose denomination cannot be determined to the separate stacker bin.

118. (Previously Presented) A U.S. currency denominating device for receiving a stack of U.S. currency bills and rapidly evaluating the bills in the stack, the device comprising:

an input receptacle positioned to receive a stack of U.S. currency bills of a plurality of denominations to be evaluated, the bills having a narrow dimension;

a transport mechanism comprising a transport drive motor and transport rollers, the transport mechanism being adapted to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being adapted to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a denomination discriminating unit adapted to determine the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the bills the discriminating unit is adapted to denominate having images associated therewith corresponding to the plurality of denominations that the discriminating unit is adapted to denominate, the discriminating unit comprising two detectors positioned along the transport path, the detectors being disposed on opposite sides of the transport path so as to be disposed

adjacent to first and second opposing surfaces of the bills, the detectors being adapted to scan passing bills and generate image signals, the discriminating unit determining the denomination of bills based on the image signals;

a single denominated bill output receptacle for receiving bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills whose denomination have not been determined by the discriminating unit, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills which are denominated by the denomination discriminating unit to the denominated bill output receptacle and bills whose denomination have not been determined by the discriminating unit to the separate stacker bin.

119. (Previously Presented) A U.S. currency evaluating device for receiving a stack of U.S. currency bills and rapidly evaluating the bills in the stack, the device comprising:

an input receptacle adapted to receive a stack of U.S. currency bills of a plurality of denominations, the bills having a narrow dimension;

a transport mechanism positioned to transport the bills, one at a time, from the input receptacle along a transport path in a transport direction, the transport mechanism being adapted to transport bills at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

a memory having stored therein master data associated with denominations of bills which the device is capable of denominating;

a denomination discriminating unit adapted to determine the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, wherein the detectors are positioned to receive light reflected off passing bills and the detectors are adapted to generate reflected light characteristic information output signals in response to detected characteristic information, the reflected light characteristic information output signals being electrically coupled to a processor,

the processor receiving the reflected light characteristic information output signals and generating data based on the output signals, the processor determining the denomination of a bill by comparing generated data associated with the bill to master data stored in the memory;

a single denominated bill output receptacle adapted to receive bills whose denomination have been determined by the discriminating unit including bills of a plurality of denominations;

a separate stacker bin adapted to receive bills whose denomination have not been determined by the discriminating unit, the stacker bin being separate from the denominated bill output receptacle; and

a diverter positioned along the transport path to route bills whose denomination have been determined by the discriminating unit to the denominated bill output receptacle and bills whose denomination have not been determined by the discriminating unit to the separate stacker bin.

120. (Previously Presented) A method of processing U.S. currency using a U.S. currency evaluating device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be denominated in an input receptacle of the device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

evaluating bills comprising the act of determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; the act of determining the denomination of bills comprising the additional acts of:

the detectors generating characteristic information output signals in response to characteristic information detected from passing bills, and

the processor receiving the characteristic information output signals and generating a denomination signal in response thereto;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined by the discriminating unit to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

121. (Previously Presented) A method of processing U.S. currency using a U.S. currency evaluating device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be denominated in an input receptacle of the device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

evaluating bills comprising the act of determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the act of determining the denomination of bills comprising the additional acts of:

receiving light from opposing surfaces of passing bills with two detectors disposed on opposite sides of the transport path,

generating received light characteristic information output signals in response to the detectors receiving light from passing bills, and

generating a denomination signal based on the output signals;

delivering bills whose denomination are determined including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

122. (Previously Presented) A method of processing U.S. currency using a U.S. currency evaluating device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be denominated in an input receptacle of the device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction at a rate in excess of 800 bills per minute with their narrow dimension parallel to the transport direction;

evaluating bills comprising the act of determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the bills having images associated therewith corresponding to the plurality of denominations, the act of determining the denomination of bills comprising the additional acts of:

scanning first and second opposing surfaces of passing bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to the first and second opposing surfaces of the bills, and generating image signals, and

determining the denomination of bills based on the image signals;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

123. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 800 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction using a transport mechanism comprising a transport drive motor and transport rollers;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, wherein the act of determining the denomination comprises the additional acts of:

the detectors detecting characteristic information from the bills,  
the detectors generating characteristic information output signals in response to detected characteristic information,  
the processor receiving the characteristic information output signals,  
the processor generating data from the received output signals, and  
the processor comparing the generated data to master data stored in a memory of the device, the memory having stored therein master data associated with denominations of bills which the device is capable of denominating;  
delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and  
diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

124. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 800 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, wherein the act of determining the denomination comprises the additional acts of:

illuminating first and second opposing surfaces of passing bills with light,

detecting light reflected off passing bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to the first and second opposing surfaces of the bills,

generating reflected light characteristic information output signals in response to detected light,

generating data based on the output signals, and

comparing the generated data to master data stored in a memory, the memory having stored therein master data associated with denominations of bills which the device is capable of denominating;

delivering bills whose denomination have been determined including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination were not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

125. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 800 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, wherein the act of determining the denomination comprises the additional acts of:

illuminating opposing surfaces of passing bills with light,

detecting light reflected off passing bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills,

generating reflected light characteristic information output signals in response to detected light,

generating characteristic information for a bill based on the output signals, and

generating a signal indicative of the denomination of a bill when generated characteristic information associated with the bill satisfactorily corresponds with master information stored in a memory;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills that have not been denominated to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

126. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension and a wide dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 800 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the act of determining the denomination of bills comprising the acts of:

illuminating first and second opposing surfaces of bills being transported with at least one rectangular strip of light, the rectangular strip of light being elongated in a direction transverse to the direction of bill movement,

detecting light reflected from the rectangular strip of light striking the bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to the first and second opposing surfaces of the bills, and

comparing information obtained from the detected reflected light with master denominating information stored in memory of the device;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

127. (Previously Presented) The method of claim 126 wherein the strip is generated using a rectangular slit that is about ½ inch in the direction transverse to the direction of bill movement.



128. (Previously Presented) The method of claim 126 wherein the strip is small relative to the size of the bills.

129. (Previously Presented) The method of claim 128 wherein the elongated dimension of the rectangular strip of light is about  $1/12$  the wide dimension of the bills.

130. (Previously Presented) The method of claim 127 wherein the elongated dimension of the rectangular strip of light is less than about  $1/12$  the wide dimension of the bills.

131. (Previously Presented) A method of processing U.S. currency using a U.S. currency evaluating device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be denominated in an input receptacle of the device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction at a rate in excess of 1000 bills per minute with their narrow dimension parallel to the transport direction;

evaluating bills comprising the act of determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 1000 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills; the act of determining the denomination of bills comprising the additional acts of:

the detectors generating characteristic information output signals in response to characteristic information detected from passing bills, and

the processor receiving the characteristic information output signals and generating a denomination signal in response thereto;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined by the discriminating unit to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

132. (Previously Presented) A method of processing U.S. currency using a U.S. currency evaluating device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be denominated in an input receptacle of the device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction at a rate in excess of 1000 bills per minute with their narrow dimension parallel to the transport direction;

evaluating bills comprising the act of determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 1000 bills per minute, the act of determining the denomination of bills comprising the additional acts of:

receiving light from opposing surfaces of passing bills with two detectors disposed on opposite sides of the transport path,

generating received light characteristic information output signals in response to the detectors receiving light from passing bills, and

generating a denomination signal based on the output signals;

delivering bills whose denomination are determined including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

133. (Previously Presented) A method of processing U.S. currency using a U.S. currency evaluating device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be denominated in an input receptacle of the device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path in a transport direction at a rate in excess of 1000 bills per minute with their narrow dimension parallel to the transport direction;

evaluating bills comprising the act of determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 1000 bills per minute, the bills having images associated therewith corresponding to the plurality of denominations, the act of determining the denomination of bills comprising the additional acts of:

scanning first and second opposing surfaces of passing bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to the first and second opposing surfaces of the bills, and generating image signals, and

determining the denomination of bills based on the image signals;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

134. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 1000 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction using a transport mechanism comprising a transport drive motor and transport rollers;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 1000 bills per minute using a discriminating unit comprising two detectors positioned along the transport path and a processor, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills, wherein the act of determining the denomination comprises the additional acts of:

the detectors detecting characteristic information from the bills,  
the detectors generating characteristic information output signals in response to detected characteristic information,  
the processor receiving the characteristic information output signals,  
the processor generating data from the received output signals, and  
the processor comparing the generated data to master data stored in a memory of the device, the memory having stored therein master data associated with denominations of bills which the device is capable of denominating;  
delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and  
diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

135. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 1000 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 1000 bills per minute, wherein the act of determining the denomination comprises the additional acts of:

illuminating opposing surfaces of passing bills with light,

detecting light reflected off passing bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the bills,

generating reflected light characteristic information output signals in response to detected light,

generating characteristic information for a bill based on the output signals, and

generating a signal indicative of the denomination of a bill when generated characteristic information associated with the bill satisfactorily corresponds with master information stored in a memory;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills that have not been denominated to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

136. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension and a wide dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 1000 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 1000 bills per minute, the act of determining the denomination of bills comprising the acts of:

illuminating first and second opposing surfaces of bills being transported with at least one rectangular strip of light, the rectangular strip of light being elongated in a direction transverse to the direction of bill movement,

detecting light reflected from the rectangular strip of light striking the bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to the first and second opposing surfaces of the bills, and

comparing information obtained from the detected reflected light with master denominating information stored in memory of the device;

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device; and

diverting bills whose denomination are not determined to a separate stacker bin, the stacker bin being separate from the denominated bill output receptacle.

137. (Previously Presented) The method of claim 136 wherein the strip is generated using a rectangular slit that is about  $\frac{1}{2}$  inch in the direction transverse to the direction of bill movement.

138. (Previously Presented) The method of claim 136 wherein the strip is small relative to the size of the bills.

139. (Previously Presented) The method of claim 138 wherein the elongated dimension of the rectangular strip of light is about  $\frac{1}{12}$  the wide dimension of the bills.

140. (Previously Presented) The method of claim 138 wherein the elongated dimension of the rectangular strip of light is less than about  $\frac{1}{12}$  the wide dimension of the bills.

141. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension and a wide dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 800 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 800 bills per minute, the act of determining the denomination of bills comprising the acts of:

illuminating first and second opposing surfaces of bills being transported with at least one rectangular strip of light, the rectangular strip of light being elongated in a direction transverse to the direction of bill movement,

detecting light reflected from the rectangular strip of light striking the bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to the first and second opposing surfaces of the bills, and

comparing information obtained from the detected reflected light with master denominating information stored in memory of the device; and

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device.

142. (Previously Presented) The method of claim 141 wherein the strip is generated using a rectangular slit that is about  $\frac{1}{2}$  inch in the direction transverse to the direction of bill movement.

143. (Previously Presented) The method of claim 141 wherein the strip is small relative to the size of the bills.

144. (Previously Presented) The method of claim 143 wherein the elongated dimension of the rectangular strip of light is about  $\frac{1}{12}$  the wide dimension of the bills.

145. (Previously Presented) The method of claim 143 wherein the elongated dimension of the rectangular strip of light is less than about  $\frac{1}{12}$  the wide dimension of the bills.

146. (Previously Presented) The method of claim 141 further comprising the act of flagging a bill when the denomination of the bill can not be determined under the control of the device.

147. (Previously Presented) The method of claim 146 wherein the act of flagging comprises the act of halting the act of transporting of the bills when the denomination of a bill is not determined by the discriminating unit.

148. (Previously Presented) The method of claim 147 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position.

149. (Previously Presented) The method of claim 148 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position in an output receptacle.

150. (Previously Presented) The method of claim 148 wherein the act of flagging comprises the act of halting the act of transporting of the bills in the stack with the bill whose denomination has not been determined being the last bill transported to an output receptacle.

151. (Previously Presented) The method of claim 150 further comprising the act of removing the bill whose denomination has not been determined from the output receptacle before said transport mechanism is restarted.

152. (Previously Presented) A method of processing U.S. currency using a currency evaluation device comprising the acts of:

receiving a stack of U.S. bills having a plurality of denominations to be evaluated in an input receptacle of the evaluation device, the bills having a narrow dimension and a wide dimension;

transporting the bills, one at a time, from the input receptacle along a transport path at a rate in excess of 1000 bills per minute in a transport direction with the narrow dimension of the bills being parallel to the transport direction;

determining the denomination of bills including bills of a plurality of U.S. denominations at a rate in excess of 1000 bills per minute, the act of determining the denomination of bills comprising the acts of:

illuminating first and second opposing surfaces of bills being transported with at least one rectangular strip of light, the rectangular strip of light being elongated in a direction transverse to the direction of bill movement,



detecting light reflected from the rectangular strip of light striking the bills with two detectors, the detectors being disposed on opposite sides of the transport path so as to be disposed adjacent to the first and second opposing surfaces of the bills, and

comparing information obtained from the detected reflected light with master denominating information stored in memory of the device; and

delivering bills that have been denominated including bills of a plurality of denominations to a single denominated bill output receptacle of the device.

153. (Previously Presented) The method of claim 152 wherein the strip is generated using a rectangular slit that is about  $\frac{1}{2}$  inch in the direction transverse to the direction of bill movement.

154. (Previously Presented) The method of claim 152 wherein the strip is small relative to the size of the bills.

155. (Previously Presented) The method of claim 154 wherein the elongated dimension of the rectangular strip of light is about  $\frac{1}{12}$  the wide dimension of the bills.

156. (Previously Presented) The method of claim 154 wherein the elongated dimension of the rectangular strip of light is less than about  $\frac{1}{12}$  the wide dimension of the bills.

157. (Previously Presented) The method of claim 152 further comprising the act of flagging a bill when the denomination of the bill can not be determined under the control of the device.

158. (Previously Presented) The method of claim 157 wherein the act of flagging comprises the act of halting the act of transporting of the bills when the denomination of a bill is not determined by the discriminating unit.

159. (Previously Presented) The method of claim 158 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position.

160. (Previously Presented) The method of claim 159 wherein the act of flagging comprises the act of halting the act of transporting with the bill whose denomination has not been determined being located at a predetermined position in an output receptacle.

161. (Previously Presented) The method of claim 159 wherein the act of flagging comprises the act of halting the act of transporting of the bills in the stack with the bill whose denomination has not been determined being the last bill transported to an output receptacle.

162. (Previously Presented) The method of claim 161 further comprising the act of removing the bill whose denomination has not been determined from the output receptacle before said transport mechanism is restarted.